DOCUMENT RESUME

ED 347 760 EC 301 377

AUTHOR Proctor, Adele
TITLE Articulatory and Acoustic Characteristics of Deaf Children's Speech Production: A Comprehensive Bibliography.
SPONS AGENCY Department of Education, Washington, DC.
PUB DATE 91
CONTRACT 133OH70189
NOTE 22p.
PUB TYPE Reference Materials - Bibliographies (131)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Acoustics; Articulation (Speech); *Deafness; Elementary Secondary Education; *Hearing Impairments; Speech; *Speech Therapy; Training Methods

ABSTRACT

The purpose of this comprehensive bibliography (approximately 200 items) is to facilitate the clinician's role in assessing and planning intervention for speech production of hard-of-hearing and deaf individuals. This set of references is alphabetized by separate categories that include articles, books, chapters in books and monographs. Consulting this set of references can expedite the work of literature searchers who are often required to supplement the speech analysis and subsequent treatment plans for the hearing-impaired individual. The references were carefully selected from a range of print and visual media. Materials that are easily accessible to clinicians and those that describe articulatory or acoustic characteristics and/or treatment recommendations for training in speech production met the primary criteria for inclusion in this reference list. References are dated from 1874 through 1991. (Author/DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED347760

ARTICULATORY AND ACOUSTIC CHARACTERISTICS OF DEAF CHILDREN'S SPEECH PRODUCTION: A COMPREHENSIVE BIBLIOGRAPHY

Adele Proctor, Sc.D.
Associate Professor
Department of Communication Disorders
The Pennsylvania State University
University Park, PA 16802

(Work supported by U. S. Department of Education, Grant No. 133OH70189)

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Adele Proctor
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EC 301377

BEST COPY AVAILABLE

Articulatory and Acoustic Characteristics of Deaf Children's Speech Production: A Comprehensive Bibliography

Abstract

The purpose of this comprehensive bibliography is to facilitate the clinician's role in assessing and planning intervention for speech production of hard-of-hearing and deaf individuals. This set of references is alphabetized by separate categories that include articles, books, chapters in books and monographs. Consulting this set of references can expedite literature searchers that are often required to supplement the speech analysis and subsequent treatment plans for the hearing-impaired individual. The references were carefully selected from a range of print and visual media. Materials that are easily accessible to clinicians and those that describe articulatory or acoustic characteristics and/or treatment recommendations for training in speech production were the primary criteria for inclusion in this reference list.

ARTICULATORY AND ACOUSTIC CHARACTERISTICS OF DEAF CHILDREN'S SPEECH PRODUCTION: A COMPREHENSIVE BIBLIOGRAPHY

Adele Proctor, The Pennsylvania State University

[Work Supported By U.S. Department of Education, Grant No. 133 GH70189]

Introduction and Purpose: Children with varying degrees of hearing loss are reported to exhibit articulatory (phonetic) and acoustic characteristics of speech production that are uniquely associated with depressed auditory sensitivity. To adequately diagnose and plan appropriate educational programming for training speech production in the hearing-impaired child, the speech-language pathologist (SLP) frequently encounters cases that require a search of the literature to compare and contrast the phonological systems of their clients with others previously reported in clinical and empirical research. Moreover, there is often a need for the SLP to consult the literature to determine the most appropriate course of treatment in teaching speech production.

This selected bibliography is organized to present clinically useful articles, books, book chapters and monographs that describe the articulatory and acoustic characteristics frequently attributed to the speech produced by hearing-impaired children. The primary criteria used to select material for the bibliography included: (1) there was some type of description of segmental characteristics of speech production, either articulatory or acoustic of hard-of-hearing and/or deaf persons; (2) there were recommendations for training speech production of hearing-impaired children and; (3) the printed material could be easily accessed by a practicing clinican, for example, through interlibrary loan. The specific purpose of this printed listing of resources is to facilitate the clinician's assessment and teaching of speech to hearing-impaired children by providing a comprehensive set of references.

This set of references will be of particular value for practicing clinicians who find limited time in busy schedules to complete literature reviews often needed to compare and contrast oral productions of hearing-impaired children on their caseloads with previous reports in the literature.

Articles

Abraham, S. (1989). Using a phonological framework to describe speech errors of orally trained hearing-impaired school agers. Journal of Speech and Hearing Disorders, 54, 600-609.

Abraham, S., Stoker, R. & Allen, W. (1988). Speech assessment of hearing-impaired children and youth: Patterns of test use. Language, Speech, and Hearing Services in Schools, 19, 17-27.

Abraham, S., & Weiner, F. (1987). The effects of grammatical category and syntactic complexity on articulation of severely and profoundly hearing-impaired children. Volta Review, 89, 197-210.

Abraham, S., & Weiner, F. (1985). Efficacy of word training vs. syllable training on articulatory generalization by severely hearing-impaired children. Volta Review, 87, 95-105.

Adams, M.E. (1914). The intelligibility of the speech of the deaf. American Annals of the Deaf, 59, 451-460.

Angelocci, A.A. (1962). Some observations on the speech of the deaf. Volta Review, 9, 403-405.

Angelocci, A.A., Kopp, G., & Hollbrook, A. (1964). The vowel formants of deaf and normal hearing eleven to fourteen year old boys. Journal of Speech and Hearing Disorders, 29, 156-179.

Avondino, J. (1918). The babbling method. Volta Review, 20, 667-671.

Bennett, C.W. (1976). Articulation training of two hearing impaired girls. Journal of Applied Behavior Analysis, 7, 439-445.

Bennett, C.W. (1978). Articulation training of profoundly hearing impaired children: A distinctive feature approach. Journal of Communication Disorders, 11, 433-442.

Bennett, C. & Ling, D. (1977). Effects of voiced-voiceless discrimination training upon articulation of hearing-impaired children. Language and Speech, 11, 287-293.

Bentler, R. A., Elfenbein, J. L. & Schum, R. L. (1984). Identical deaf triplets: Audiological, speech-language, and psychological characteristics. American Annals of the Deaf, 129, 466-480.

Binnie, C. A., Daniloff, R.G. & Buckingham, H. (1982). Phonetic disintegration in a five-year-old following sudden hearing loss. Journal of Speech and Hearing Disorders, 47, 181-189.

Boothroyd, A. (1985). Evaluation of speech production of the hearing impaired. Journal of Speech and Hearing Research, 28, 185-196.

Bradley, W.H. (1959). Some relationships between pitch discrimination and speech development. Laryngoscope, 69, 422-437.

Brannon, J. B. (1966). The speech production and spoken language of the deaf. Language and Speech, 9, 127-136.

Byres, V.W. (1973). Initial consonant intelligibility by hearing-impaired children. Journal of Speech and Hearing Research, 16, 48-55.

Calvert, D. R. (1962). Speech sound duration and the surd-sonant error. Volta Review, 64, 401-402.

Carney, A. E. (1986). Understanding speech intelligibility in the hearing impaired. Topics in Language Disorders, 6, 47-59.

Carr, J. (1953). An investigation of the spontaneous speech sounds of five-year-old deaf-born children. Journal of Speech and Hearing Disorders, 18, 22-29.

Cornett, R. O. (1964). Cued Speech. American Annals of the Deaf, 112, 3-13.

DiCarlo, L. M. (1976). Speech and the hearing-impaired child: Theory and practice (review). Volta Review, 78, 228-230.

Dodd, B. (1976). The phonological systems of deaf children. Journal of Speech and Hearing Disorders, 4, 185-198.

Eveslage, R. A., & Buchmann, A. (1973). The effects of consequences delivered contigent upon intelligible speech by deaf children. American Annals of the Deaf, 118, 446-453.

Fletcher, S. G. (1983). Dynamic orometrics: A computer-based means of learning about and developing speech by deaf children. American Annals of the Deaf, 128, 525-534.

Fletcher, S. G., (1989). Visual articulatory training through dynamic orometry. Volta Review, 91, 47-64.

Fletcher, S. G., & Hasegawa, A. (1983). Speech modification by a deaf child through dynamic orometric modeling and feedback. Journal of Speech and Hearing Disorders, 48, 178-185.

Fletcher, S. G., & Higgins, J. M. (1980). Performance of children with severe to profound auditory impairment in instrumentally guided reduction of nasal resonance. Journal of Speech and Hearing Disorders, 45, 181-194.

Fletcher, S. G., Smith, S. C. & Hasegawa, A. (1985). Vocal/verbal response times of normal-hearing and hearing-impaired children. Journal of Speech and Hearing Research, 28, 548-555.

Formby, C. & Monsen, R.B. (1982). Long-term average speech spectra for normal and hearing-impaired adolescents. Journal of Acoustical Society of America, 71, 196-202.

Gallaudet, E. M. (1874). Results of articulation teaching at Northampton. American Annals of the Deaf , 19, 136-145.

Geers, A.E. & Schick, B. (1988). Acquisition of spoken and signed English by hearing-impaired children of hearing-impaired and hearing parents. Journal of Speech and Hearing Disorders, 53, 136-143.

Geffner, D. & Freeman, L. (1978). Speech and language assessment scales of deaf children. Journal of Communication Disorders, 11, 215-226.

Geffner, D. (1980). Feature characteristics of spontaneous speech production in young deaf children. Journal of Communication Disorders, 13, 443-454.

Gold, T. (1980). Speech production in hearing-impaired children. Journal of Communication Disorders, 13, 397-418.

Gregory, J. F. (1986). Phrasing in the speech and reading of the hearing impaired. Journal of Communication Disorders, 19, 289-297.

Gulian, E., Fallside, F., Hinds, P. & Keiller, C. (1983). Acquisition of frication by severely hearing-impaired children. British Journal of Audiology, 17, 219-231.

Gullian, E., Hinds, P., Fallside, F. & Brooks, S. (1983). Vowel learning and vowel system of deaf children: Age and feedback related differences. Journal of Communication Disorders, 16, 449-469.

Gulian, E., Hinds, P., Fallside, F. & Keiller, C. (1983). Acquisition of the voicing distinction by profoundly hearing-impaired children. British Journal of Audiology, 17, 233-244.

Heider, R., Heider, G., & Sykes, J. (1941). A study of the spontaneous vocalizations of fourteen deaf children. Volta Review, 43, 10-14.

Herx, M.A. & Hunt, f.E. (1976). A framework for speech development within a total communication system. American Annals of the Deaf, 121, 537-546.

Hudgins, C. V. (1934). A comparative study of the speech coordination of deaf and normal subjects. Journal of Genetic Psychology, 44, 1-48.

Hudgins, C. V. (1934). Speech breathing snd speech intelligibility. Volta Review, 48, 642-647.

Hudgins, C. V. (1937). Voice production and breath control in the speech of the deaf. American Annals of the Deaf, 82, 338-363.

Hudgins, C. V., & Numbers, F. C. (1942). An investigation of the intelligibility of the speech of the deaf. Genetic Psychology Monographs, 26, 293-392.

Hughson, W., Ciocco, A., Whiting, G. E. & Lawrence, S. P. (1941). An analysis of speech characteristics in deafened children with observation on training method. The laryngoscope, 51, 868-891.

Hutchinson, J. M., Kornhauser, R. L., Beasley, D. S. & Beasley, D. C. (1978). Aerodynamic functioning in consonant production in hearing-impaired children. Audiology, Hearing, Education, 4, 23-31.

BEST COPY AVAILABLE

Itoh, M., Yoshiyuki, H., Daniloff, R. G. & Binnie, C. A. (1982) Selected aerodynamic characteristics of deaf individuals during various speech and nonspeech tasks. Folia Phoniatrica, 34, 191-209.

John, J. E. J. & Howarth, J. N. (1965). The effects of time distortions on the intelligibility of deaf children's speech. Language and Speech, 8, 127-134.

Kelly, C., Dancer, J. & Bradley, R. (1986). Correlations of SPINE test scores to judges' ratings of speech intelligibity in hearing-impaired children. Volta Review, 88, 145-150.

Kent, R. D., Osberger, M. J., Netsell, R., & Hustedde, C. G. (1987). Phonetic development in identical twins differing in auditory function. Journal of Speech and Hearing Disorders, 52, 64-75.

Lach, R., Ling, D., Ling, A., & Ship, N. (1970). Early speech development of deaf infants. American Annals of the Deaf, 115, 522-526.

Larr, A. & Stockwell, R.A. (1959). A test of speech intelligibility. Volta Review, 61, 403-407.

Lenneberg, E. H., Rebelsky, F. G. & Nichols, I. A. (1965). The vocalizations of infants born to deaf and hearing parents. Human Development, 8, 23-27.

Leeper, H. A., Perez, D. M. & Mencke, E. O. (1987) Influence of utterance length upon temporal measures of syllable production by hearing-impaired children. Folia Phoniatrica, 39, 230-243.

Levitt, H., Stromberg, H., Smith, C. & Gold, T. (1980). The structure of segmental errors in the speech of deaf children. Journal of Communication Disorders, 13, 419-441.

Lieberth, A. K. (1985). Changes in voice, articulation and language following meningitis: A case study. Journal of Rehabilitative Audiology, 18, 102-111.

Ling, D. (1979). Principles underlying development of speech communication skills among hearing-impaired children. Volta Review, 81, 211-223.

Luterman, D., & Chasin, J. (1981). The deafness management quotient as an indicator of oral success. Volta Review, 83, 404-409.

Maassen, B. (1986). Marking word boundaries to improve the intelligibility of the speech of the deaf. Journal of Speech and Hearing Research, 29, 227-230.

Maassen, B. & Povel, D. (1985). The effect of segmental and suprasegmental corrections on the intelligibility of deaf speech. Journal of Speech and Hearing Research, 78, 877-886.

Mangan, K. (1961). Speech improvement through articulation testing. American Annals of the Deaf, 106, 391-396.

Marcotte, A.C. & LaBarba, R.C. (1987). The effects of linguistic experience on cerebral lateralization for speech production in normal-hearing and deaf adolescents. Brain and Language, 31, 276-300.

Marimont, R. B. (1974). How can the deaf learn to speak? Volta Review, 76, 223-230.

Markides, A. (1970). The speech of deaf and partially-hearing children with special reference to factors affecting intelligibility. British Journal of Disorders of Communication, 5, 126-140.

Markides, A. (1978). Assessing the speech intelligibility of hearing-impaired children. Oral reading versus picture description. Journal of the British Association of Teachers of the Deaf, 2, 185-189.

Martello, A. (1981). The Ling approach to teaching speech as adapted in a day program for the hearing impaired. Volta Review, 83, 458-465.

Maskarinec, A. S., Cairns, G. G., Butterfield, E. C., & Weamer, D. K. (1981). Longitudinal observations of individual infants' vocalizations. Journal of Speech and Hearing Disorders, 46, 267-273.

Mason, M. K., & Bright, M. (1937). Tempo in rhythmic speech education. American Annals of the Deaf, 82, 385-401.

Matkin, A. M. & Matkin, N. D. (1985). Benefits of total communication as perceived by parents of hearing-impaired children. Language, Speech and Hearing Services in Schools, 16, 64-74.

Maxwell, M. (1989). A signing deaf child's use of speech. Sign Language Studies, n62, 23-42.

McDermott, R. & Jones, T. (1984). Articulation characteristics and listeners' judgements of the speech of children with severe hearing loss. Language, Speech, and Hearing Services in Schools, 15, 110-126.

McGarr, N.S. (1983). The intelligibility of deaf speech to experienced and inexperienced listeners. Journal of Speech and Hearing Research, 26, 451-458.

McGarr, N. S. (1981). The effect of context on the intelligibility of hearing and deaf children's speech. Language and Speech, 24, 255-264.

McGarr, N. S., & Osberger, M. J. (1978). Pitch deviancy and intelligibility of deaf speech. Journal of Communication Disorders, 11, 237-248.

McReynolds, L. V. (1984). Final consonant generalization in hearing-impaired children's articulation. Analysis and Intervention in Developmental Disabilities, 4, 267-284.

McReynolds, L. V., & Jetzke, E. (1986). Articulation generalizations of voiced-voiceless sounds in hearing-impaired children. Journal of Speech and Hearing Disorders, 51, 348-355.

Mencke, E. O., Ochsner, G. J. Testat, E. W. (1984). Speech intelligibility of deaf speakers and distinctive feature usage. Journal of Auditory Research, 24, 63-38.

Metz, D. E., Whitehead, R. L. & Whitehead, B. H. (1984). Mechanics of vocal fold vibration and laryngeal articulatory gestures produced by hearing-impaired speakers. Journal of Speech and Hearing Research, 27, 62-69.

Metz, D.E., Samar, V.J., Sitler, R.W. & Whitehead, R.L. (1985). Acoustic dimensions of hearing-impaired speakers' intelligibility. Journal of Speech and Hearing Research, 28, 345-355.

Metz, D. E., Schiavetti, N., Samar, V.J. & Sitler, R.W. (1990). Acoustic dimensions of hearing-impaired speakers' intelligibility: Segmental and suprasegmental characteristics. Journal of Speech and Hearing Research, 33, 476-487.

Miller, G. A., Heise, C. A., & Lichten, D. (1951). The intelligibility of speech as a function of the context of the test material. Journal of Experimental Psychology, 41, 329-335.

Miller-Shaw, M. O. (1936). A study in the analysis and correction of the speech of the hard of hearing. American Annals of the Deaf, 81, 225-231.

Millin, J. (1972). Therapy for reduction of continuous phonation in the hard-of-hearing population. Journal of Speech and Hearing Disorders, 36, 496-498.

Monsen, R. B. (1974). Durational aspects of vowel production in the speech of deaf children. Journal of Speech and Hearing Research, 17, 386-398.

Monsen, R. B. (1976a). Normal and reduced phonological space: The production of English vowels by deaf adolescents. Journal of Phonetics, 4, 189-198.

Monsen, R. B. (1976b). Second format transitions of selected consonant-vowel combinations in the speech of deaf and normal-hearing children. Journal of Speech and Hearing Research, 19, 279-289.

Monsen, R. B. (1976c). The production of English stop consonants in the speech of deaf children. Journal of Phonetics, 4, 29-41.

Monsen, R. B. (1978). Towards measuring how well hearing-impaired children speak. Journal of Speech and Hearing Research, 21, 197-219.

Monsen, R. B. (1979). Acoustic qualities of phonation in young hearing-impaired children. Journal of Speech and Hearing Research, 22, 270-288.

Monsen, R.B. (1981). A usable test of speech intelligibility of deaf talkers. American Annals of the Deaf, 126, 845-852.

Monsen, R.B. (1983a). The oral speech intelligibility of hearing-impaired talkers. Journal of Speech and Hearing Research, 48, 286-296.

Monsen, R. B. (1983b). Voice quality and speech intelligibility among deaf children. American Annals of the Deaf, 128, 12-19.

Monsen, R.B. & Shaughnessy, D. (1978). Improvement in vowel articulation of deaf children. Journal of Communication Disorders, 11, 417-424.

Nickerson, R. S. (1975). Characteristics of the speech of deaf persons. Volta Review, 77, 342-362.

Nittrouer, S. & Hochberg, I. (1985). Speech instruction for the deaf children: a communication-based approach. American Annals of the Deaf, 130, 491-495.

Nober, E. H. (1967). Articulation of the deaf. Exceptional Children, 33, 611-621.

Norton, S. (1973). Speech development for the deaf. Instructor, 83, 43.

Novelli-Olmstead, T. & Ling, D. (1984). Speech production and speech discrimination by hearing-impaired children. Volta Review, 86, 72-80.

Oller, D.K. & Eilers, R. (1988). The role of audition in infant babbling. Child Development, 59, 441-449.

Oller, D. K., Eilers, R. E., Bull, D. & Carney, A. E. (1985). Prespeech vocalization of a deaf infant: a comparison with normal metaphonological development. Journal of Speech and Hearing Research, 28, 47-63.

Oller, .D, Jensen, H. & Lafayette, R. (1978). The relatedness of phonological processes of a hearing impaired child. Journal of Communication Disorders, 11, 97-105.

Oller, D. K., & Kelly, C. A. (1974). Phonological substitutions of a hard-of-hearing child. Journal of Speech and Hearing Disorders, 39, 65-74.

Osberger, M.J. (1987). Training effects on vowel production by two profoundly hearing-impaired speakers. Journal of Speech and Hearing Research, 30, 241-151.

Osberger, M.J., Johnstone, A., Swarts, E. & Levitt, H. (1978). The evaluation of a model speech training program for deaf children. Journal of Communication Disorders, 11, 293-313.

Osberger, M.J. & Levitt, H. (1979). The effect of time errors on the intelligibility of deaf children's speech. Journal of the Acoustical Society of America, 66, 1316-1324.

Owens, E., Benedict, M., & Schubert, E.D. (1972). Consonant phonemic errors associated with pure-tone configurations and certain kinds of hearing impairment. Journal of Speech and Hearing Research, 15, 308-322.

Parkhurst, B., & Levitt, H. (1978). The effect of selected prosodic errors on the intelligibility of deaf speech. Journal of Communication Disorders, 11, 246-256.

Patterson, K. & Wright, A. E. (1990). The speech, language or hearing-impaired child: At-risk academically. Childhood Education, 67, 91-95.

Penn, J. P. (1955). Voice and speech patterns of the hard of hearing. Acta Otolaryngologica (suppl. 124).

Perigoe, C. & Ling, D. (1986). Generalization of speech skills in hearing-impaired children. Volta Review, 88, 351-366.

Plant, G. (1984). The effects of an acquired hearing loss on speech production: A case study. British Journal of Audiology, 18, 39-48.

Porter, K. A.,& Dickerson, M. L. (1986). Syllabic complexity and its relation to speech intelligibility in a deaf population. American Annals of the Deaf, 131, 36-42.

Pronovost, W. (1979). Speech assessment and speech improvement for the hearing impaired. Volta Review, 81, 511-514.

Pye, C., Wilcox, K.A. & Siren, K.A. (1988). Refining transcriptions: The significance of transcriber errors. Journal of Child Language, 15, 17-37.

Reichstein, J. & Weisel, A. (1986). Hearing thresholds as predictors of speech production performance. Scandinavian Audiology, 15, 223-226.

Robb, M. P., Hughes, M. C. & Freese, D. J. (1985). Oral diadochokinesis in hearing-impaired adolescents. Journal of Communication Disorders, 18, 79-89.

Russell, G. (1929). Normal speech pitch patterns for the deaf: A new approach. Oralism and Auralism, 8, 1-17.

Samar, V.J. & Metz, D.E. (1988). Criterion validity of speech intelligibility rating-scale procedures for the hearing-impaired population. Journal of Speech and Hearing Research, 31, 307-316.

Schiavetti, N., Metz, D.E. & Sitler, R.W. (1988). Construct validity of direct magnitude estimation and interval scaling of speech intelligibility: Evidence from the study of the hearing-impaired. Journal of Speech and Hearing Research, 24, 441-445.

Schiavetti, N., Sitler, R.W., Metz, D.E. & Houde, R.A. (1981). Prediction of contextual speech intelligibility from isolated word intelligibility measures. Journal of Speech and Hearing Research, 27, 623-626.

Schiff-Myers, N. B. & Klein, H. B. (1985). Some phonological characteristics of the sppech of normal-hearing children of deaf parents. Journal of Speech and Hearing Research, 28, 466-474.

Schulte, K. (1978). The use of supplementary speech information in verbal communication. Volta Review, 80, 12-20.

Sims, D. G., Gottermeier, L. & Walter, G.G. (1980). Factors contributing to the development of intelligible speech among prelingually deaf persons. American Annals of the Deaf, 125, 374-381.

Sitler, R. W., Schiavetti, N. & Metz, D.E. (1983). Contextual effects in the measurement of hearing-impaired speakers' intelligibility. Journal of Speech and Hearing Research, 26, 30-34.

Smith, B. L. (1982). Some observations concerning pre-meaningful vocalizations of hearing-impaired infants. Journal of Speech and Hearing Disorders, 47, 439-440.

Smith, C. R. (1975). Residual hearing an speech production in deaf children. Journal of Speech and Hearing Research, 18, 795-811.

Somers, M. (1977). A distinctive features approach to analysis of speech of the deaf. American Annals of the Deaf, 122, 470-474.

Springer, S. R., MacDougall, J. C., & Mattingly, S. (1977). Speech and the hearing-impaired child: Theory and practice (Review). American Annals of the Deaf, 122, 305-306.

Stark, R. E. (1977). Speech acquisition in deaf children. Volta Review, 79, 98-109.

Stevens, K. N., Nickerson, R. S., Boothroyd, A., & Rollins, A. (1976). Assessment of nasalization in the speech of deaf children. Journal of Speech and Hearing Research, 19, 393-416.

Stoel-Gammon, C. & Otomoto, K. (1986). Babbling development of hearing-impaired and normally hearing subjects. Journal of Speech and Hearing Disorders, 51, 33-41.

Stoel-Gammon, C. (1988). Prelinguistic vocalizations of hearing-impaired and normally hearing subjects: A comparison of consonantal inventories. Journal of Speech and Hearing Disorders, 53, 302-315.

Subtelny, J, & Snell, K. (1988). Efficacy of a distinctive feature model of therapy for hearing-impaired adolescents. Journal of Speech and Hearing Disorders, 53, 194-200.

Sykes, J. L. (1940). A study of the spontaneous vocalizations of young deaf children. Psychological Monograph, 52, 104-123.

Tye, N., Zimmerman, G. N. & Kelso, J. A. (1983). "Compensatory articulation" in hearing-impaired speakers: A cineflurographic study. Journal of Phonetics, 11, 101-115.

Tye-Murray, N. (1987). Effects of vowel contexts of the articulatory postures of deaf speakers. Journal of Speech and Hearing Research, 30, 99-104.

Vogel, I. (1976). Deaf phonology: A case study of an English child. Papers and Reports on Child Language Development, 11, 89-102.

Waldron, M. B. (1982). Identification of nonlinear controls in a developmental model of motor speech in hearing and deaf children. Perceptual and Motor Skills, 54, 3-10.

West, J., & Weber, J. (1973). A phonological analysis of the spontaneous language of a four year old hard of hearing child. Journal of Speech and Hearing Disorders, 38, 25-35.

White, R. S. (1969). Teaching speech with television. Education Television, 1, 13-16.

Whitehead, R. (1987). Fundamental vocal frequency characteristics of hearing-impaired young adults. Volta Review, 89, 7-15.

Whitehead, R., & Barefoot, S. (1980). Some aerodynamic characteristics of plosive consonants produced by hearing-impaired speakers. American Annals of the Deaf, 125, 366-373.

Whitehead, R. L. & Whitehead, B. H. (1985). Acoustic characteristics of vocal tension/harshness in the speech of the hearing-impaired. Journal of Communication Disorders, 18, 351-361.

Wilson-Favors, V. (1987). Using the Visual Phonics System to improve speech skills: a preliminary study. Perspectives for Teachers of the Hearing Impaired, 6, 2-4.

Books

Boothroyd, A. (1984). Hearing impairments in young children. Englewood Cliffs, NJ: Prentice Hall.

Bradley-Johnson, S. & Evans, L. D. (1991). Psychoeducational assessment of hearing-imparied students: Infancy through high school

Bunch, G. O. (1987). The curriculum and the hearing-impaired student: Theoretical and practical considerations. San Diego, CA: College Hill Press. (pp. 145-176 - Speech curriculum).

Calvert, D., & Silverman, S.R. (1975). Speech and Deafness. Washington, DC: A. G. Bell Association for the Deaf.

Connor, L.A. (Ed.).(1971). Speech for the deaf child: Knowledge and use. Washington, DC: A.G. Bell Association for the Deaf.

Ewing, A., & Ewing, E. C. (1964). Teaching deaf children to talk. Washington, DC:A.G. Bell Association for the Deaf.

Haycock, G. S. (1933). The teaching of speech. Washington, DC: A. G. Bell Association for the Deaf.

Hochberg, I., Levitt, H. & Osberger, M.J. (1983). Speech of the hearing impaired: Research, training and personnel preparation. Baltimore, MD: University Park Press. (Now available from Austin, TX:Pro-Ed).

Leshin, G. Pearce, M.F. & Funderburg, R.S. (1974). Speech for the hearing impaired child. Tucson, AR: University of Arizona, Department of Special Education.

Ling, D. (1984). Early intervention for hearing-impaired children: oral options. San Diego, CA: College Hill Press.

Ling, D. (1976). Speech and hearing-impaired child: theory and practice. Washington, DC: A. G. Bell Association for the Deaf.

Ling, D. & Ling, A.H. (1978). Aural habilitation-the foundation of verbal learning in hearing-impaired children. Washington, DC: A.G.Bell Association for the Deaf.

Markides, A. (1983). The speech of hearing-impaired children. NH:Manchester University Press.

Perkins, W. (Ed.). (1984). Hearing disorders. NY, NY: Thieme Medical Publishers, Inc.

Ross, M. (1982). Hard of hearing children in regular schools. Englewood Cliffs, NJ: Prentice Hall.

Ross, M., Brackett, D. & Maxon, A. B. (1991) Assessment and management of main streamed hearing-imparied children: Principles and practices. Austin, TX: Pro-Ed.

Sims, D.G., Walter, G.G. & Whitehead, R.L. (1982). Deafness and communication: assessment and training. Baltimore, Maryland: Williams and Wilkins.

Story, A. J. (1901). Speech for the deaf. Stoke on Trent, England: Hill and Ainsworth.

Story, A. J. (1915). Speech, reading and speech for the deaf. Stoke on Trent, England: Hill and Ainsworth.

Stovall, D., Wright, K. &Cockrell, D. (1982). Teaching speech to hearing-impaired infants and children. Illinois: Charles C. Thomas.

Subtelny, J.D. (1980). Speech assessment and speech improvement for the hearing impaired. Washington, DC: A.G. Bell Association for the Deaf.

Subtelny, J.D., Orlando, N.A. & Whitehead, R.L. (1981). Speech and voice characteristics of the deaf. Washington, DC: A.G. Bell Association for the Deaf.

Vorce, E. (1974). Teaching speech to the deaf. Washington, DC: A. G. Bell Association for the Deaf.

Yale, C. A. (1946). Formation and development of English sounds. Northampton, MA: The Clarke School for the Deaf.

Chapters in Books

Calvert, D. R. (1982). Articulation and hearing impairment. In N. Lass, L. McReynolds, J. Northern, & D. Yoder (Eds.). Speech, Language and Hearing (pp. 638-651). Phila, PA: W. B. Saunders.

Easterbrooks, S.R. (1987). Speech/language assessment with school-age hearing impaired children. In J. Alpiner & P. McCarthy (Eds.), Rehabilitative audiology: children and adults (pp. 188-240). Baltimore, MD: Williams and Wilkins.

Erber, N. (1982). Auditory training (pp. 157-170). Washington, DC: A.G. Bell Association for the Deaf.

Fry, d.B. (1966). The development of the phonological system in the normal and deaf child. In F. Smith & G.A. Miller (Eds.), The genesis of language: a psycholinguistic approach (pp. 187-206). Cambridge, MA: MIT Press.

Hirsh, I. J. (1966). Teaching the deaf child to speak. In F. Smith & G.A. Miller (Eds.), The genesis of language: A psycholinguistic approach (pp.207-216). Cambridge, MA: MIT Press.

Lenneberg, E. H. (1967). Language in the context of growth and maturation. In E.H. Lenneberg, Biological foundations of language (pp.125-142). New York: Wiley.

Leutke-Stahlman, B. & Luckner, J. (1991). Speech. In B. Leutke-Stahlman & J. Luckner, Effectively educating students with hearing impairments (pp. 178-199). White Plains, NY: Longman Publishers.

Levitt, H. (1978). The acoustics of speech production. In M. Ross & T.G. Giolas (Eds.), Auditory management of hearing-impaired children (pp.117-144). Baltimore, MD:University Park Press.

Levitt, H. (1982). Speech as a physical stimulus. In F.H. Bess, B.A. Freeman & J.S. Sinclair (Eds.), Amplification in Education (pp. 26-65). Washington, DC: A.G. Bell Association for the Deaf.

Ling, D. & Milne, M. (1982). The development of speech in hearing-impaired children. In F.H. Bess, B.A. Freeman & J. S. Sinclair (Eds.), Amplification in education (pp.98-108). Washington, DC; A.G. Bell Association for the Deaf.

Mavilya, M. (1968). Spontaneous vocalization and babbling in hearing-impaired infants. In G. Fant (Ed.), International symposium on speech communication abilities and profound deafness (pp. 163-171). Washington, DC: A.G. Bell Association for the Deaf.

Monsen, R. B. (1976). A taxonomic study of diphthong production in the speech of deaf children. In S. K. Hirsch, D. H. Eldredge, I. S. Hirsh, & S. R. Silverman (Eds.), Hearing and Davis: Essays honoring Hallowell Davis (pp. 281-290). St. Louis, Missouri: Washington University Press.

Osberger, M. J., & McGarr, N. S. (1982). Speech production characteristics of the hearing impaired. In N. Lass (Ed.). Speech and Language: Advances in basic research and practice (pp.221-283). (vol. 8). NY: Academic Press.

Proctor, A. & Bickley, C. (1988). Application of acoustic analysis of assessment of deaf children's speech production. In I. G. Taylor (Ed.). The education of the deaf child: Current perspectives. Vol. III (pp. 1562-1600). London: Croom-Helm.

Stark, R. E. (1972). Some features of the vocalizations of yound deaf children. In J. F. Bosma (Ed.). The Third Symposium on Oral Sensation And Perception: The Mouth of the Infant (pp. 431-443). Springfield, Illinois: Charles C. Thomas.

Stark, R.E. (1979). Speech of the hearing impaired child. In L.J. Bradford & W.G. Hardy (Eds.), Hearing and hearing impairment (pp. 209-223). NY: Grune & Stratton.

Subtelny, J. D. (1983). Integrated speech and language instruction for the hearing impaired adolescent. In N. Lass (Ed.), Speech and language: advances in basic research and practice (pp. 43-102). NY: Academic Press.

Subtelny, J.D. (1977). Assessment of speech with implications for training. In F. Bess (Ed.), Childhood deafness: Causation, assessment and management (pp.183-194). NY: Grune & Stratton.

Trybus, R.J. (1980). National data on rated speech intelligibility of hearing-impaired children. In J. Subtelny (Ed.), Speech assessment and speech improvement of the hearing-impaired (pp.67-71). Washington, DC: A.G. Bell Association.

Wolk, S. & Schildroth, A.N. (1986). Deaf children and speech intelligibility: a national study. In A.N. Schilroth & M.A. Karchmer (Eds.), Deaf children in America. (pp. 139-159). San Diego, CA: College Hill Press.

Monographs

Fiedler, M. F. (1969, October). Developmental studies of deaf childrren. ASHA Monographs No. 13. Rockville, MD: American Speech-Language-Hearing Association.

Jensema, C.J., Karchmer, M.A. & Trybus, R.J. (1978). The rated speech intelligibility of hearing impaired children: Basic relationships and detailed analysis. Series R, Number 6. Washington, DC: Gallaudet University, Office of Demographic Studies.

Lauter, J.L. (Ed.). (1985). Proceedings of the conference on the planning and production of speech in normal and hearing-impaired individuals: a seminar in honor of S. Richard Silverman. ASHA Monographs No. 15. Rockville, MD: American Speech-Language-Hearing Association.

Levitt, H., McGarr, N. S. & Geffner, D. (Eds.). (1987). Development of language and communication skills in hearing-impaired children. ASHA Monographs No. 26. Rockville, MD: American Speech-Language-Hearing Association.

Osberger, M. J. (Ed.). (1986). Language and learning skills of hearing-impaired students. ASHA Monographs No. 23. Rockville, MD: American Speech-Language-Hearing Association.